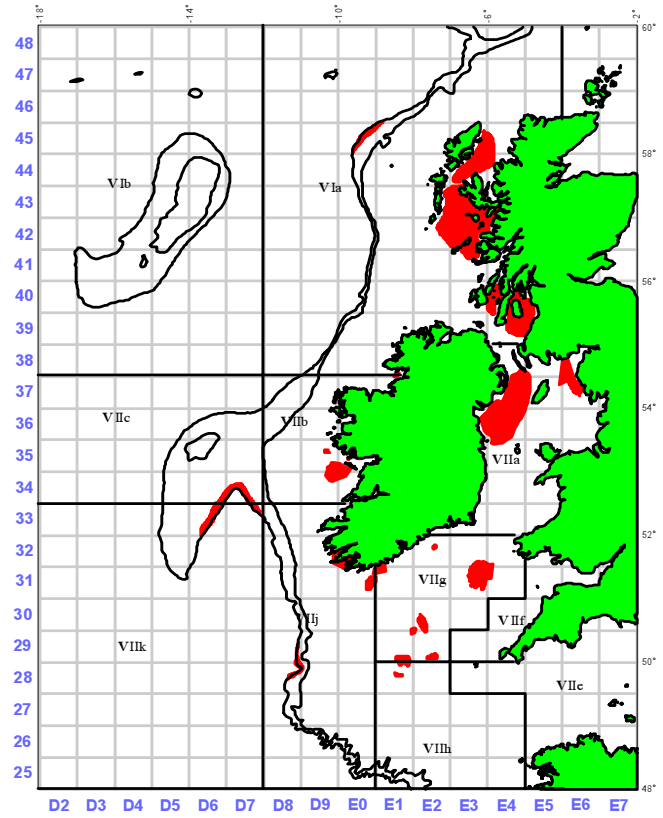
## Age and Growth

*Nephrops* can grow up to ~ 80mm CL but can be legally caught by the fishery when they are larger than 20mm CL in the Irish Sea and 25mm in the other Irish fishing grounds.

Due to difficulties in ageing coupled with their complex biology and behaviour stock assessment of *Nephrops* is notoriously difficult.

Since 2002 the Marine Institute has been using underwater television surveys to independently estimate abundance, distribution and stock sizes on the Aran Grounds, Western Irish Sea and the Celtic Sea (Smalls). This method has great potential as a basis for assessment and advice for poorly understood *Nephrops* stocks.

*Nephrops fishing grounds around the Irish coast are shown in red*




**The Fisheries Science Services Team**
In order to ensure the sustainable harvesting of the fisheries resources, it is essential that management is underpinned by sound marine science that is clear, transparent, timely, impartial and inclusive.

The Marine Institute's Fisheries Science Service Team works closely with the fishing industry to provide this marine science through.

- Research Vessel Surveys (Acoustic, Groundfish, Egg and Larval Fish, Underwater TV)
- Surveys on Commercial Vessels
- Market Sampling of Landings
- Discard Sampling at Sea
- Analysis of Logbook Data
- Studies on the Biology of Fish
- Working with the Regional Advisory Councils (RAC's)
- Articles in the trade press
- Working with our international scientific colleagues
- Regular meetings with Industry Representatives and DCMNR
- Regular Meetings with EU

This information is essential to our understanding of the current state of the fisheries resources and the ecosystem in which they live.

More detailed information, as well as similar leaflets on related issues are available from

Marine Institute, Fisheries Science Services (FSS), Rinville, Oranmore, Co. Galway, Ireland. Phone: + 353(0) 91 387200

**Or your local Port Based Technician in**

| | |
|---|---|
| Clogherhead | (041) 9889788 |
| Dunmore East | (051) 385011 |
| Castletownbere | (027) 71937 |
| Ros a Mhíl | (091) 572584 |
| Killybegs | (074) 9741871 |


HEADQUARTERS

MARINE INSTITUTE
Rinville,
Oranmore,
Co. Galway
Tel: +353 91 387200
Fax: +353 91 387201

MARINE INSTITUTE REGIONAL OFFICES & LABORATORIES

MARINE INSTITUTE
80 Harcourt Street
Dublin 2
Tel: +353 1 4766500
Fax: +353 1 4784988

MARINE INSTITUTE
Furnace
Newport
Co. Mayo
Tel: +353 98 42300
Fax: +353 98 42340


www.marine.ie

www.marine.ie

A DEEPER UNDERSTANDING...

# THE DUBLIN BAY PRAWN

## FISHERIES SCIENCE SERVICES

**Assessing, researching and advising on the sustainable exploitation of living marine resources in a healthy ecosystem**

Marine Institute
Foras na Mara


## *Nephrops* - Dublin Bay Prawn

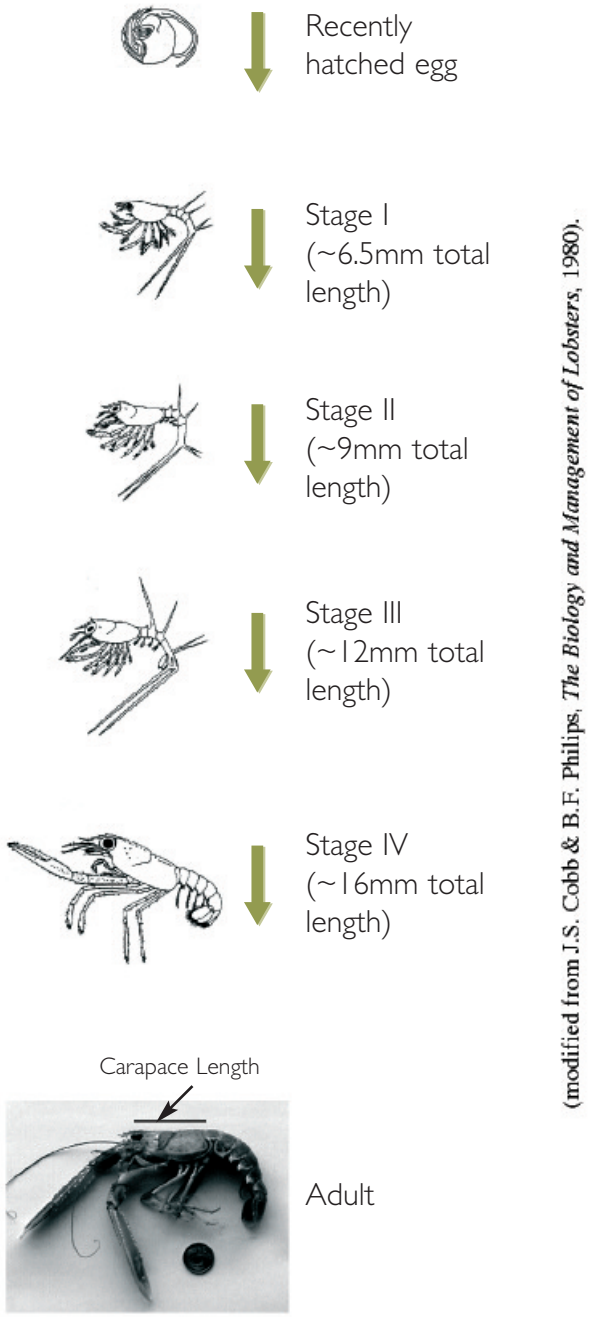
*Nephrops norvegicus*, also know as Dublin Bay prawns and Norwegian lobster, are the second most valuable species fished by the Irish fleet. In 2002 landings were worth almost €28 million. *Nephrops* are also a very important species for the processing industry in Ireland that use prawns to produce the value added product 'scampi'. Marine Institute scientists have spent many years researching the biology and stock dynamics this commercially important species.

*Nephrops* is a widely distributed species but despite its common name, the "Dublin Bay Prawn", this species is not found in Dublin Bay. It is found, however, in the Irish Sea, the Celtic Sea and off the West Coast of Ireland. It is also found from Iceland to Morocco and into the Mediterranean as far as Egypt, occurring at depths from 15m to 800m.

## Biology of *Nephrops*

Its location is mainly dependent on the availability of soft substrate in which it can construct its burrows. *Nephrops* spend a great deal of time in their burrows and their emergence from these is related to time of year, light intensity and tidal strength.

These factors are often thought to be responsible for huge fluctuations in catch size. Burrows are particularly important to *Nephrops* as they offer protection from potential predators. One of their main predators is cod, but other species are also known to feed on them e.g. rays and dogfish.




Life Cycle of *Nephrops norvegicus*

They are particularly vulnerable to predation when they have recently moulted (shed) their old shell and while their new shell has not yet hardened. During the course of their lifetime *Nephrops* will moult at least once a year. This is because the *Nephrops* shell cannot grow with the individual and in order to increase in size they must shed the old one and a new larger one will replace it. *Nephrops* tend to remain in their burrows throughout this period.

## Reproduction

Female *Nephrops* reach maturity at approximately 23 mm CL (carapace length), while male *Nephrops* are thought to be mature at 26 mm CL. Once mature, the female ovary begins to ripen and slowly changes colour from cream to dark green through the course of the summer. This colour change can be seen through the carapace (thorax) wall. The eggs are spawned and fertilised in autumn. They are carried on the underside of the female's tail (abdomen) where they remain for the eight to nine months incubation period. Females tend to remain in their burrows during incubation, thus explaining the disappearance of females from the catch over the winter months.

Hatching occurs from April until June producing minute larvae, which bear no resemblance to the adults. These larvae go through 4 stages (3 of which are free-swimming) over a 40-day period prior to becoming a juvenile *Nephrops*. These juveniles have a carapace length of 2-3 mm. They are thought to share the burrows of the adults for the first months of their lives before constructing their own.